

Sub A

1. A semiconductor passive Q-switch providing variable outputs suitable for use in a laser system to produce laser pulses having defined output characteristics including a lasing wavelength, said Q-switch including variable transmittance means at the lasing wavelength for tuning said output characteristics of said laser pulses.
2. A semiconductor Q-switch according to claim 1 wherein said output characteristics include pulse duration, pulse repetition rate, peak power and averaged output power of said laser pulses.
3. A semiconductor Q-switch according to claim 1 wherein said variable transmittance means includes a wafer having two surfaces that are optically polished, one or both surfaces being optically coated to form a gradient variation of transmission at a wavelength substantially in the IR region.
4. A semiconductor Q-switch according to claim 3 wherein said surfaces are optically coated to form a gradient variation of transmission at a wavelength in the IR region.
5. A semiconductor Q-switch according to claim 1 wherein said variable transmittance means includes a material having variable thickness, such as a wedge.
6. A semiconductor Q-switch according to claim 1 wherein tuning of said output characteristics is effected by translating the Q-switch.
7. A semiconductor Q-switch according to claim 1 wherein tuning of said output characteristics is effected by moving the Q-switch in a curvilinear path.
8. A semiconductor Q-switch according to claim 7 wherein said curvilinear path includes circular rotation.

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16. A laser system according to claim 15 wherein said IR wavelength is substantially 1.06 μ m.